



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,106	03/11/2004	Daisuke Watari	TOC-0012	4615

23353 7590 09/11/2006

RADER FISHMAN & GRAUER PLLC  
LION BUILDING  
1233 20TH STREET N.W., SUITE 501  
WASHINGTON, DC 20036

EXAMINER

BANKHEAD, GENE LOUIS

ART UNIT PAPER NUMBER

3744

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/797,106	WATARI ET AL.	
	Examiner	Art Unit	
	Gene L. Bankhead	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03/11/2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 12-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/23/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The recitation of "further comprises" in line 5, is considered legal phraseology and should be removed from the abstract.

Appropriate correction required.

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

Art Unit: 3744

be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-2 and 5-11 are rejected on the grounds of nonstatutory obviousness-

type double patenting as being unpatentable over claims 1-5 of U.S. Patent No.

6702188. Although the conflicting claims are not identical, they are not patentably

distinct from each other because claims 1-5 ('188) recite an expansion valve with a

valve element driven by a temperature-sensing drive section that operates in response

to the temperature and pressure of the low-pressure cooling medium fed from the

evaporator; constraining means giving a constraining force to the valve element; a valve

body with an orifice that provides communication between a high- pressure side

passage through which a cooling medium flows in and a low-pressure side passage

through which the cooling medium flows out; a valve element that adjusts the volume of

the cooling medium flowing through the orifice; an operating rod that operates the valve

element in the valve opening direction; a temperature sensing drive section that drives

the operating rod; constraining means for constraining the valve element is disposed on

the upstream side of the orifice of the high-pressure side passages; the valve element is

formed in the shape of a ball and the constraining means is a support ring that supports

the valve element; the support ring is elastically deformable, has upper and lower

annular ring shaped portions and a plurality of plate like vibration-isolating springs

(formed by cutting the ring shaped portions to protrude therefrom) disposed on one side

of the ring shaped portion; the vibration-isolating springs are formed from a curved plate, and the valve element is supported on the surface of the curved plate.

Claims 1-2 and 5-11 of the instant application teach the same subject matter wherein the valve plug of the instant application corresponds to the valve element in the '188 reference; the volume of the instant application corresponds to the flow rate in the '188 reference; the temperature sensing unit of the instant application corresponds to the temperature- sensing drive section in the '188 reference; the orifice of the instant application corresponds to the orifice in the '188 reference; the support ring is the support ring in the '188 reference; the vibration proof springs of the instant application correspond to the vibration proof springs in the '188 reference; and the operating rod of the instant application corresponds to the operating rod in the '188 reference.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Sudo et al. (US 2002/0100812 A1).

Regarding claim 1, Sudo et al. teach an expansion valve, in which a valve plug 5 is driven by means of a temperature sensing unit 12 which operates in accordance with

the temperature and pressure of a low-pressure refrigerant (column 2 lines 22-40) delivered from an evaporator 33, and adjusts the flow rate of refrigerant flowing into the evaporator (column 1 lines 5-20 and column 2 lines 1-13). Note it is inherent that as the hole opening size, in which refrigerant flows, varies the flow rate of refrigerant will vary as well. Sudo et al. further teach a constraint means 7 attached to the valve plug for applying a force of constraint to the valve plug (column 2 lines 14-18).

In regards to claim 2, Sudo et al. disclose an expansion valve having a valve body 1 and orifice 4 internally connecting a high pressure passage 3 through which refrigerant flows in and a low pressure passage 2 through which refrigerant flows out. They further disclose a valve plug 5 capable of adjusting the flow rate of refrigerant flowing in the orifice (column 1 lines 5-15). Sudo et al. further teach a temperature sensing drive unit 12 capable of driving the operating rod (column 1 lines 5-20). They further teach a constraint means 7, located on the streamside of the high pressure passage with respect to the orifice, capable of constraining the valve plug.

With regard to claims 3-4, Sudo et al. teach all limitations of claims 1 and 2, and further discloses the constraint means is indirectly attached to the valve body. Note 7 is connected to the spring and the spring is attached to the adjusting nut 8. Sudo et al. further teach a compression coil spring 9 used to support the constraint means. Note it is well known in the art compression coil springs are elastic as they do not exhibit plastic deformation.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sudo et al. in view of Kobayashi et al. (US 2002/0185621 A1).

Regarding claim 5, Sudo et al. teach all claim limitations of claims 1 and 2, and further teach the valve plug is spherical. However they fail to teach a constraint means that is a support ring supporting the valve plug or the operating rod. Kobayashi et al. teach an expansion valve with a constraint means that is a support ring 52, held in constraint by a snap ring 54, supporting the operating rod 50 (page 2 paragraph 0029 and Figure 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a support ring into the operating rod of Sudo et al. to stabilize the operating rod and valve plug and to seal refrigerant and thus provide for more accurate flow control of the refrigerant.

#### ***Allowable Subject Matter***

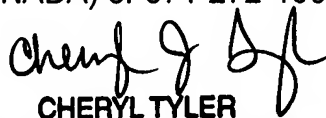
Claims 12-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gene L. Bankhead whose telephone number is (571)-272-8963. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571)-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
CHERYL TYLER  
SUPERVISORY PATENT EXAMINER

Examiner  
Art Unit 3744  
GB